

β^2

6. **(Thrice Amended)** The ion implantation apparatus claimed in claim 5, further comprising means for measuring the ratio of the energy contamination from a deceleration ratio which is defined by the ratio of implanted ion energy to the extracted ion energy.

β^3

9. **(Thrice Amended)** A method of implanting ions into a wafer, comprising the steps of:

setting a beam transport efficiency to a predetermined value;

decreasing a neutral fraction of the beam;

monitoring the beam transport efficiency; and

reducing an energy contamination to a value lower than a target value.

β^4

22. **(Thrice Amended)** The ion implantation apparatus as claimed in claim 10, wherein a beam transport efficiency is measured before the beam starts to impinge upon a wafer.

23. **(Thrice Amended)** The ion implantation apparatus as claimed in claim 15, wherein a specified ratio of energy contamination is set in each implantation recipe, which is automatically converted to the limit of the beam transport efficiency.
